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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,073	10/04/2005	Ekkehard Jahns	278597US0PCT	8798

22850 7590 10/06/2008
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

HAIDER, SAIRA BANO

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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10/06/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/552,073	JAHNS, EKKEHARD	
	Examiner	Art Unit	
	SAIRA HAIDER	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/1/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 9-12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Jahns et al. (US 6,200,681).

3. Jahns discloses latent heat storage media of microcapsules comprising as core materials one or more lipophilic substances (latent heat storage materials) whose solid/liquid phase transition is within the range from -20 to 120 °C and as shell a polymer obtainable by free-radical polymerization of a monomer mixture comprising: from 30 to 100% by weight, based on the overall weight of the monomers, of one or more C.sub.1 -C.sub.24 -alkyl esters of acrylic and/or methacrylic acid (monomer I), from 0 to 80% by weight, based on the overall weight of the monomers, of a bi- or polyfunctional monomer (monomers II) which is insoluble or of low solubility in water, and from 0 to 40% by weight, based on the overall weight of the monomers, of other monomers (monomers III) (abstract).

4. Jahns discloses that the microcapsules are produced by preparing a stable oil-in-water emulsion from the monomers, a free-radical initiator and the lipophilic substance to be encapsulated, which form the disperse phase in said emulsion (col. 3, line 63 to col. 4, line 3). Suitable microcapsule particle sizes are in the range of 1 to 30 microns (col. 5, lines 37-38). In reference to claim 12, Jahns discloses that divinyl and polyvinyl monomers are suitable for use as monomer II, wherein such monomers bring about crosslinking of the capsule wall in the course of

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the polymerization (col. 3, lines 35-37). Wherein suitable crosslinkable monomers include, monomers I, such as esters of methacrylic acid (col. 3, lines 11-14).

5. Jahns discloses that the latent heat storage media has various applications including heat transfer in heating and cooling systems or as heat storage media in building materials, furthermore, since one form of the storage medium is liquid, microcapsules, inter alia, have been used for ease of handling (col. 1, lines 24-37). Accordingly, Jahns discloses utilizing the inventive liquid microcapsules in heating and cooling systems for buildings.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jahns et al. (US 6,200,681) in view of Denu et al. (US 2003/0118822).

8. Jahns applies as above and discloses the inclusion of very fine solid inorganic particles as part of stabilization via the Pickering system. Suitable inorganic particles include, for example, metal salts of calcium (col. 6, lines 7-22). However, Jahns fails to disclose the average size of such solid inorganic particles. Thus attention is directed to the Denu reference, which discloses the formation of microcapsules comprising a core of a lipophilic substance and a polymeric shell. Wherein the polymeric shell of Denu comprises the same monomers as disclosed by Jahns. Wherein Denu discloses utilization of solid inorganic particles as part of the stabilization via the Pickering system; suitable particles include metal salts of calcium ([0018-0019]). Specifically, preference is given to

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solid inorganic particles having a mean size of from 45 to 500 nm ([0020]). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the 45 to 500 nm solid inorganic particles of Denu as the stabilizing agent in the Pickering system in the process of microcapsule formation. Wherein the motivation for the combination is provided by the fact that both Jahns and Denu form the same type of microcapsule via the same method, Denu merely provides more details as to the preferred size of inorganic particles to favorably form the claimed microcapsules. One would readily look to the art to determine the optimally recognized ranges.

9. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jahns et al. (US 6,200,681) in view of Avrea (US 5,044,430).

10. Jahns applies as above, but fails to disclose the claimed details of the heat transfer system. Thus attention is directed to the Avrea reference which discloses a static cooling system for use in internal combustion engines (col. 1, lines 19-21). Within the system, heat is absorbed from the engine and transferred for dissipation to the atmosphere. Liquid coolant, circulated within the closed circuit of the system, functions as the heat transfer medium (col. 1, lines 30-36). Wherein, as noted above Jahns discloses that the liquid microcapsules can be used in cooling systems, can effectively maintain a temperature in systems and has improved stability to hydrolysis (col. 1, lines 24-36; 64-67). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the microcapsule transfer media of Jahns in the engine of Avrea in order to effectively cool the engine with microcapsule media that is capable of maintaining a constant temperature and has improved stability to hydrolysis.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAIRA HAIDER whose telephone number is (571)272-3553. The examiner can normally be reached on Monday-Friday from 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796

Saira Haider
Examiner
Art Unit 1796